

299-W18-79 (A7562) Log Data Report

Borehole Information:

Borehole: 299-W18-79 (A7562)			Site: 216-Z-1A Crib		
Coordinates (WA St Plane)		GWL¹ (ft): None	GWL Date: 09/13/06		
North (m)	East (m)	Drill Date	TOC Elevation	Total Depth (ft)	Type
135431.644	566549.436	03/67	673.79 ft	23.0	Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Steel	- 0.3	6 5/8	6	5/16	-0.3	23

Borehole Notes:

The logging engineer could not measure the casing diameter because the casing is below ground surface. The casing dimensions above are estimated from casing measurements from other boreholes in the vicinity. Logging data acquisition is referenced to the ground surface. During drilling, contamination was encountered at 23 ft. The maximum depth of the current logging is 18.1 ft from the ground surface.

Logging Equipment Information:

Logging System: Gamma 1E		Type: SGLS (70%) SN: 34-TP40587A
Effective Calibration Date: 05/02/06	Calibration Reference: DOE-EM/GJ1200-2006	
Logging Procedure: MAC-HGLP 1.6.5, Rev. 1		

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat			
Date	09/14/06	09/14/06			
Logging Engineer	Spatz	Spatz			
Start Depth (ft)	1.0	18.0			
Finish Depth (ft)	18.0	18.0			
Count Time (sec)	200	1000			
Live/Real	R	R			
Shield (Y/N)	N	N			
MSA Interval (ft)	1.0	1.0			
ft/min	N/A ²	N/A			
Pre-Verification	AE190CAB	AE190CAB			
Start File	AE190000	AE190018			
Finish File	AE190017	AE190018			
Post-Verification	AE191CAA	AE191CAA			
Depth Return Error (in.)	N/A	0			
Comments	No fine-gain adjustment.	No fine-gain adjustment.			

Logging Operation Notes:

Logging was conducted with no centralizer on the sonde. Data were collected at a 1000 second counting time at the bottom of the borehole at 18 ft.

Analysis Notes:

Analyst:	Henwood	Date:	11/21/06	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Pre-run and post-run verifications for the logging system are performed before and after the day's data acquisition. The acceptance criteria were met.

A casing correction for a 5/16-in. thick casing was applied to the SGLS data.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with an EXCEL worksheet template identified as G1EMay06.xls using an efficiency function and corrections for casing and dead time as determined from annual calibrations.

Results and Interpretations:

A plot indicating MDLs for three radionuclides commonly observed in the 216-Z cribs is included. ²³⁷Np, based on the ²³³Pa 312.17 keV gamma energy line, is detected at less than 1 pCi/g. This detection is at a depth of 18 ft, approximately 5 ft above the depth where the driller reported contamination. Therefore, it is likely the ²³⁷Np concentration is much higher at 23 ft. It is also possible that ²³⁹Pu and ²⁴¹Am exist at levels above the respective MDLs at greater depths. On the basis of other boreholes in the vicinity, ²³⁷Np, ²³⁹Pu, and ²⁴¹Am often are detected at the same depth locations.

List of Log Plots:

Depth Reference is ground surface

Depth Scale - 20 ft/inch

Manmade Radionuclides

Natural Gamma Logs

Combination Plot (0-120 ft)

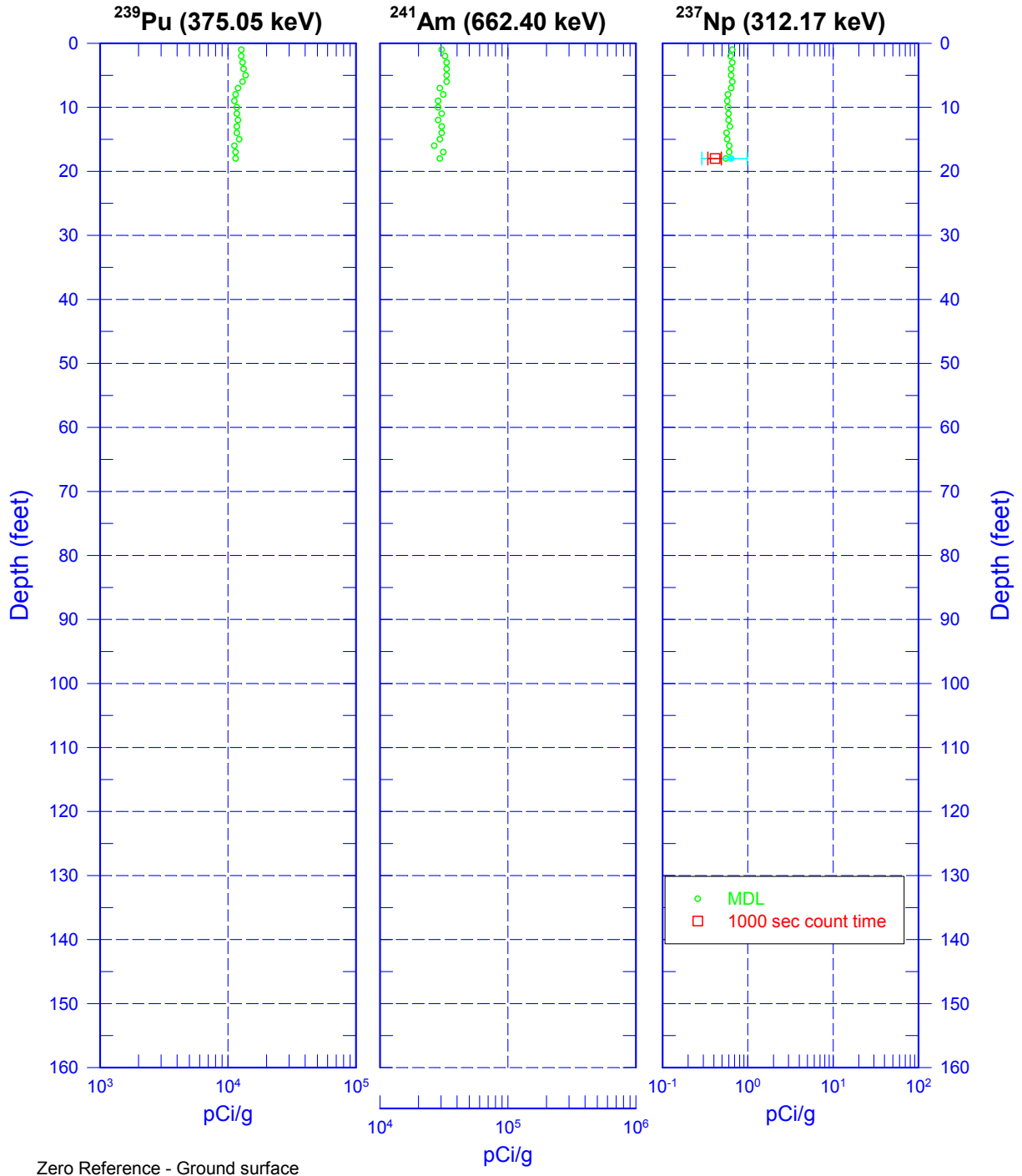
Combination Plot (0-60 ft)

Total Gamma &, Dead Time

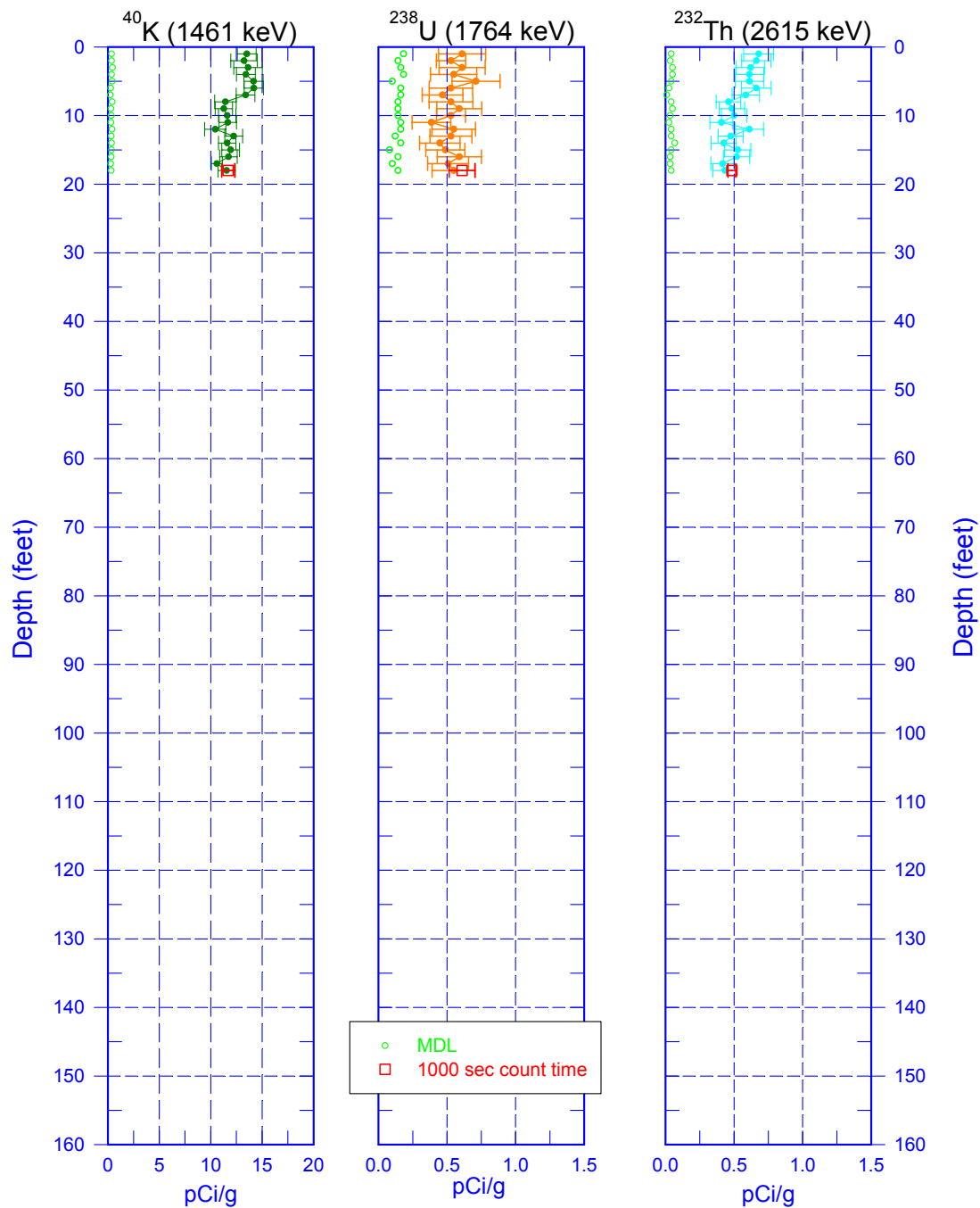
¹ GWL – groundwater level

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Manmade Radionuclides

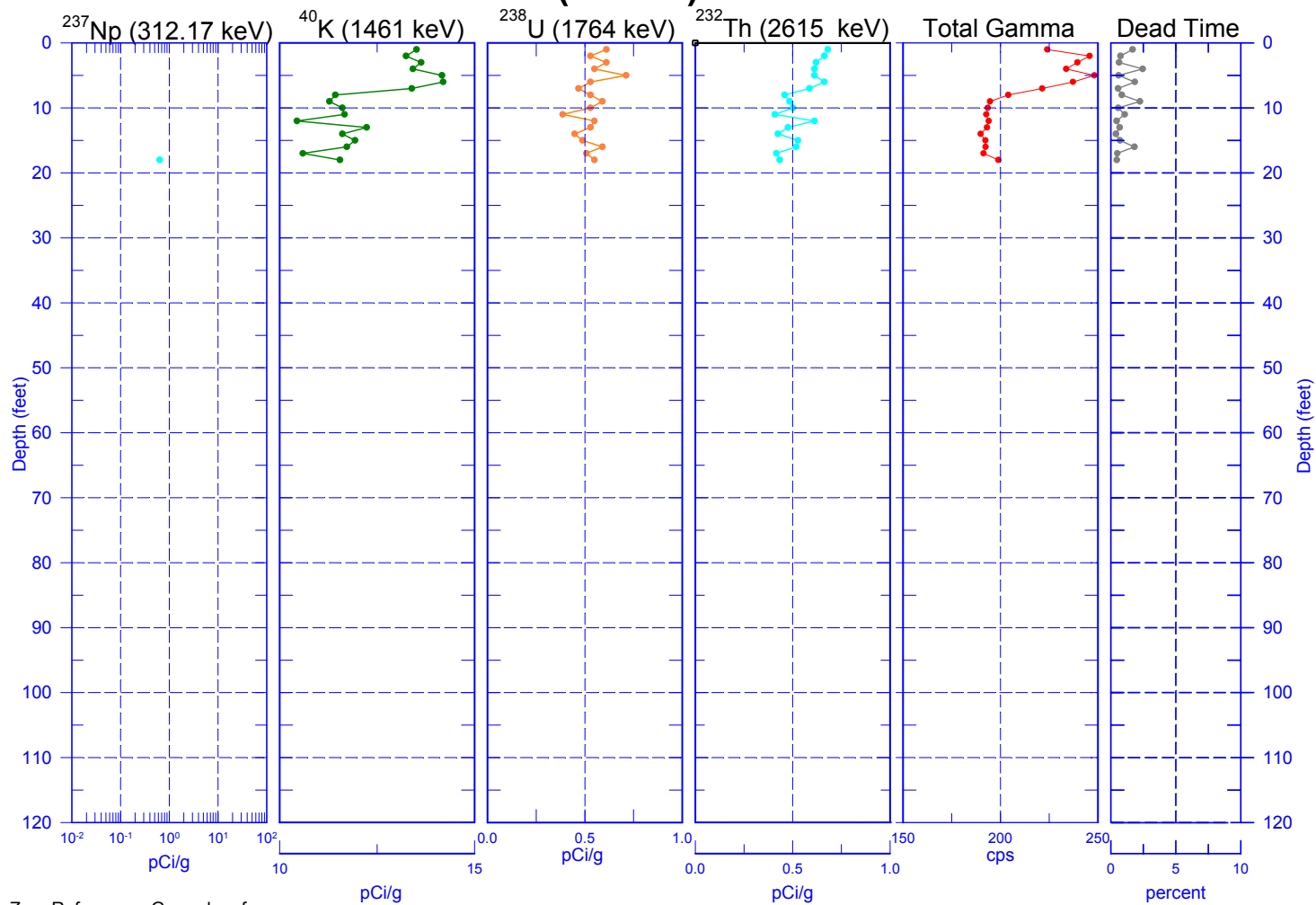


299-W18-79 (A7562) Natural Gamma Logs

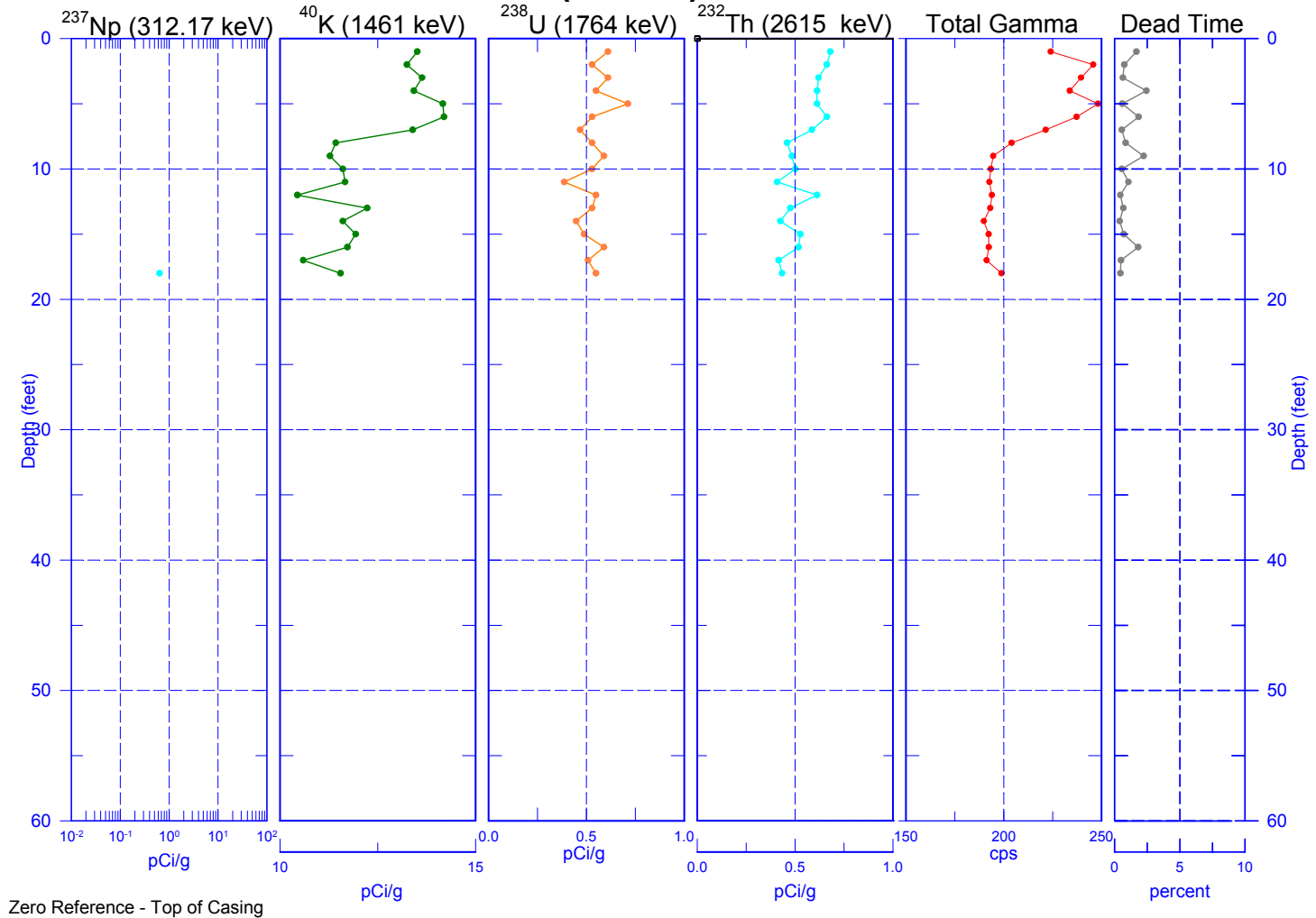


Zero Reference = Ground surface

299-W18-79 (A7562) Combination Plot

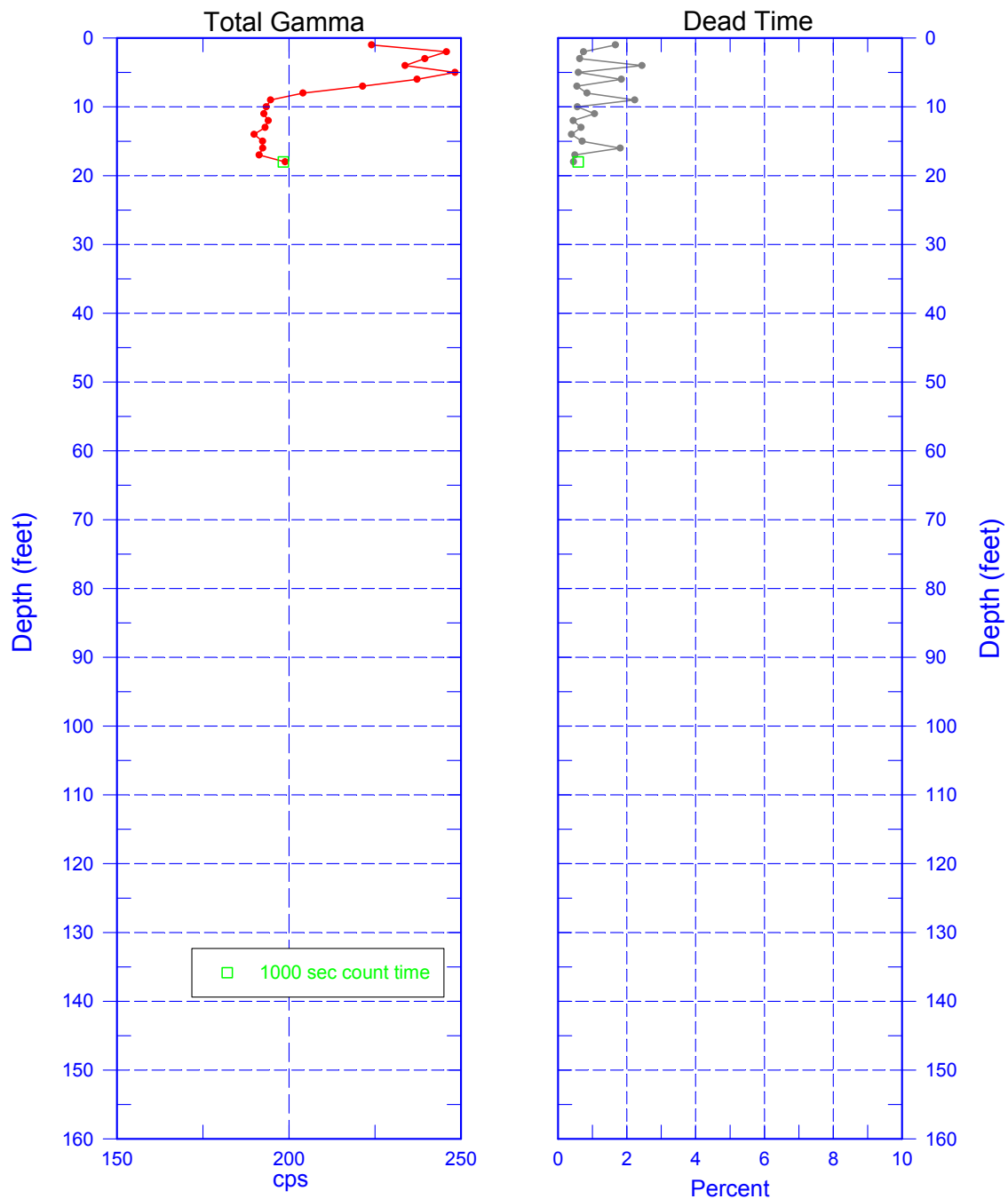


299-W18-79 (A7562) Combination Plot



299-W18-79 (A7562)

Total Gamma & Dead Time



Reference - Ground surface